

MULTILEVEL SPEED REGULATION JACK

ABSTRACT

A multilevel speed regulation jack includes an input oil cylinder, an output oil cylinder, and a fluid conduit member between the cylinders. The output oil cylinder includes a cylinder body containing an annular space and a tube piston, which fits in the annular space. A sliding sleeve of the tube piston is movably positioned in the annular space. An annular in-flow oil chamber is formed between the end annular surface of the tube piston and the cylinder body, and a central in-flow oil chamber is formed between the inner central surface of the piston and the cylinder body. The fluid conduit member includes at least two parallel fluid channels connected to the central in-flow oil chamber and the annular in-flow oil chamber, respectively. A control valve in one of the fluid channels opens/closes the channel. The jack can automatically switch between different jacking speeds based on the load sensed by the system and therefore has a high jacking efficiency.

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